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The next day all the eggs had hatched and we found both parents busily engaged in carrying food to the young. As soon as the mother fed her offspring she brooded them till the father appeared with food, then he would in turn care for and protect the young from the cold. So during the entire day each performed

an individual share in household duties. Often both parents were at the nest together, but at such times fortune did not favor us in getting a photograph.

We were able to picture the mother, however, as she paused just for an instant beside the nest after feeding her young and again just as she reached under the protecting roof to feed the nestlings. In these pictures a distinct lacking of the wing bars will be noticed, which is a peculiar mark of the Cassin vireo. The other distinguishing mark, a white streak through the eye is readily told from the orbital ring about the eye of the other vireo.

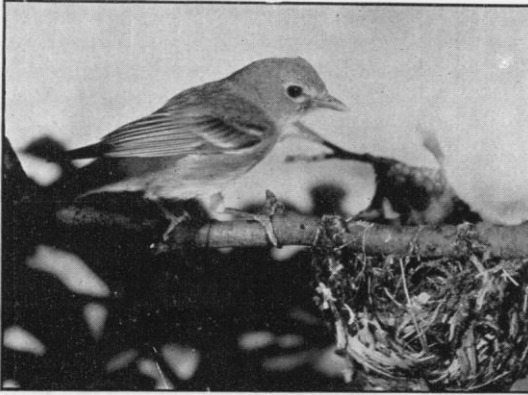


PHOTO BY H. T. BOHLMAN  
CASSIN VIREO AT NEST.

### A Remarkable Flight of Louisiana Tanagers.

BY W. OTTO EMERSON, HAYWARDS, CAL.

ONE of the most wonderful occurrences of the movements of birds in the season of migration which ever came under my notice, took place at Haywards during May, 1896, when countless numbers of *Piranga ludoviciana*, or Louisiana tanagers, began to make their appearance between May 12 and 14. From the 18th to the 22nd they were to be seen in endless numbers, moving off through the hills and canyons to their summer breeding range in the mountains. This continued till the 28th, and by June 1 only here and there a straggling member of the flock was to be seen.

They were first found feeding on early cherries, in an orchard situated along the steep bank of a creek, on the edge of rolling hills, well covered with a thick young growth of live oaks, which faced the orchard on the east. To this thick cover they would fly, after filling themselves with cherries, and rest till it was time to eat again. This they would keep up from daylight till dark, coming and going singly all day, without any noise whatever being heard.

Two men were kept busy shooting them as fast as they came into the trees which lay on the side next to the oak-covered hills. The tanagers at first seemed to take no notice of the gun reports, simply flying to other parts of the orchard. During the first week one of the gunners took his stand at the other side of the orchard, along the creek bank, under some tall willows, where the birds would come and alight, after being shot at so often. After the first week, I found on go-

ing here (May 17), that dozens on dozens of the birds were lying about. For the first two weeks the birds so found were mostly males, but later on the greater numbers were composed of females and young of the year, in gray and light olive green plumage.

On the 22nd of May, in driving through the canyon, some nine mile to the other side of the range of hills between Haywards and the Livermore Valley, I found the tanagers scattered through the black oaks. They were moving eastward, more notably in the morning. In the middle of the day they kept to the cool thick foliage.

In the orchard from fifty to sixty shots a day were used, but they seemed to make no decrease in the number of tanagers that came every day to feed on the ripening cherries. Tanagers lay about everywhere, and no doubt many must have flown off to die in the bushes or on the hill sides. The neighboring cats soon found out the feast, and every night would come to have their fill of the gay colored birds. In counting up the two weeks' continual shooting of say three dozen birds a day, at the least, of forty to fifty shells used, we have a total of over 600 birds killed, and it may have run up to a thousand, as the neighboring boys came in with their guns to have a shot at them also, for fear the birds might come to their orchards next.

I noticed one fact of the restriction of the tanagers to the orchards along the hill edges. None were found, so to speak, in the larger orchards about the town of Haywards. I found them only for a few days in my own orchard, that is to say from the 26th of May to June 4th. After shooting at them once or twice, they became very shy, flying to the tall trees along the creek as soon as any person was seen.

At this time large flocks of waxwings, or cedar birds, were about the orchard trees, but I found that they did no damage to the fruit (as they are known to do in the eastern orchards). Mr. R. H. Beck notes tanagers all through the Calaveras Valley to the San Joaquin Valley up the mountains to Lake Tahoe of the Sierras. Mr. H. Keading tells me he met with them all through the mountains about the vicinity of Mono, Elnora and others of the high Sierra lakes. From my records for Haywards, for the last fifteen years, I have only noted them twice: a female shot May 28, 1880, and a female seen May 21, 1883. Mr. W. E. Bryant mentions them as not a common bird about the Oakland hills. Mr. H. A. Gaylord of Pasadena, Cal., in a letter under date of June 16, 1896, states that "they were seen singly from April 23 to May 1. From this date up to May 5 their numbers were greatly increased, and by May 5 there was an unusually large number of them. Then for about ten days, until May 16, the

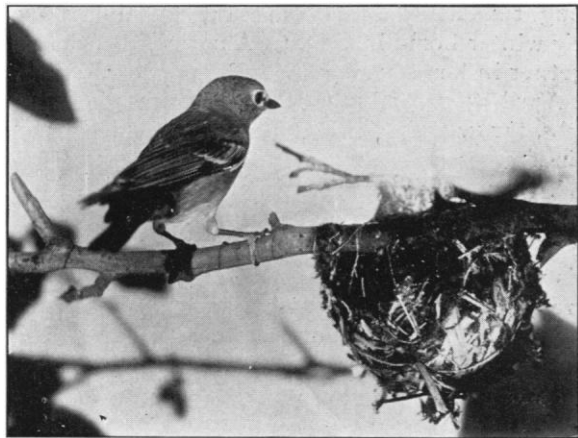


PHOTO BY H. T. BOHLMAN.

CASSIN VIREO.

great wave of migration was at its height. Tanagers were seen everywhere, and noticed by everyone. After May 20 they decreased in numbers, and by May 26 the last ones had left the valley. The number of these tanagers now breeding in our mountains is no larger than usual." He also says, "the damage done to cherries in one orchard was so great that the sales of the fruit which was left, did not balance the bills paid out for poison and ammunition. The tanagers lay all over the orchard, and were, so to speak, 'corded up' by hundreds under the trees."

It will be seen that the main body of this wave of migration did not reach this part of the state till eight days later—May 22 at Haywards. The last ones were seen June 4 to 6 at Haywards, while at Pasadena Mr. Gaylord says the last ones were seen May 28, eight days earlier than those which were observed here.

There must have been thousands of tanagers destroyed all through the path of their movement along the state, as they worked their way to the breeding grounds.

What caused these unusually large numbers of tanagers to move so regularly through the State, can hardly be known with accuracy. It may have been brought about by a late cold wave meeting them on their way northward from their winter home in Central America, and they may have been impelled to move together in large companies to where food was plenty, and the weather milder. On April 15 we had a hard killing frost all through the State, which would, no doubt, throw these tanagers together, as it did many other of our spring migrants. This fact I noted while in camp at the foot of Mt. Diablo, April 11 to 19, 1896. On one or two mornings large numbers of birds were observed in the canyon, while it was warm and sunny. But as soon as the cold spell set in, all bird life seemed to have suddenly disappeared, to appear again several days later. This was particularly true of the white-throated swifts and violet-green swallows. Three times the birds left the canyon bare of the summer visitors. The last time they returned late one afternoon, when, at sundown, the air was alive with swallows and swifts sailing along the face of the cliffs, or over the tops of the oaks. The next morning found the canyon awake with bird life and song, showing that the cold wave had passed.

### The Harris Hawk on His Nesting Ground.

BY FLORENCE MERRIAM BAILEY.

FIFTEEN miles west of Corpus Christi, Petranilla Creek throws a belt of rich vegetation across the prairie. Its walls are crowned with elms and live oaks whose serried branches are hung with waving gray moss, while encircling a floor massed with pink primroses grow a mixture of Mexican and United States trees and bushes—hackberry, ash, palmetto, all-thorns and cactus. Birds and mammals naturally flock here and also show southern admixtures, the clay banks of the creek being tracked up by coon, coyote, wild cat, and armadillo, while in April and May the trees are alive with such birds as the cuckoo, chat, wren, wood pewee, kingbird, cardinal, and a variety of warblers including the blackburnian, together with the golden-fronted woodpecker and nonpareil.

As we were admiring the beauty of the place our attention was attracted by the cries of a mockingbird pirouetting around a big Harris hawk (*Parabuteo unicinctus harrisi*) perched on the bare top of a tree in the open. The mocker would